



Applied R&D for a Shared,
Integrated Grid

EUROPEAN WORKSHOP WEEK 2025

April 1–3 2025 | Barcelona, Spain

Session Overview



EPRI EUROPEAN WORKSHOP WEEK 2025

9th edition – Barcelona, Spain



- ✓ EPRI's main **collaborative research event** in the European region.
- ✓ Over 200 attendees from **leading European organisations** in the energy sector.
- ✓ Exchange of ideas, **best practices** and latest findings.
- ✓ Defining collaborative responses to **energy transition**.
- ✓ **17 workshops** covering:
 - » Updates and insights from leading innovation efforts;
 - » Technical and detailed discussions focused on resolving key challenges for the industry;
 - » Identifying opportunities for new collaborations to meet emerging challenges.

Together...Shaping the future of the energy sector in Europe

Workshop Agenda

	Ciutadella A+B+C	Gracia A+B	Barcelona A	Barcelona B
Tuesday 1 st of April				
9:00 – 12:30	Technology Innovation Session	Holistic Planning and Engagement for Our Energy and Environmental Future: SMARTargets and Integrated Energy System Planning	Data Center Grid Integration	Fostering collaboration and expertise in the growing Hydrogen value chain
13:30 – 17:00		Getting Climate READi®: A Common Framework for Physical Climate Risk Assessment	Driving Innovation in Energy Distribution: A Collaborative Workshop by EPRI and E.DSO (I)	
19:00 – 20:00	Cocktail Reception - Altitude Terrace (Outside) at The W Barcelona at 7 PM			
Wednesday 2 nd of April				
9:00– 12:30	Industrial Electrification and Decarbonization	Latest advancements towards resilient, flexible, and efficient wind farms	Driving Innovation in Energy Distribution: A Collaborative Workshop by EPRI and E.DSO (II)	Combined Cycle Gas Turbines - Life in the Future
13:30 – 17:00	Customer Demand Flexibility		Energy Storage: An Emerging Tool for Achieving Your Decarbonization Goals (I)	Future Network Operations Toolkit
Thursday 3 rd of April				
9:00 – 12:30	Control Center of the Future	Increasing Reliability & Performance in PV while Scaling Solar Capacity	Energy Storage: An Emerging Tool for Achieving Your Decarbonization Goals (II)	
13:30 – 17:00	Maintaining Grid Stability: Overcoming Challenges of Operation with High IBR Penetration		AI @ EPRI	Hydropower: Paving the Way for a Clean Energy Transition in Europe

Why participate?

Engage in focused workshops with industry leaders to tackle immediate challenges.

1

Receive insights on the latest research findings.

2

Dive deep into the world of innovations and emerging technologies with expert guidance

3



4

Revamp your understanding of R&D and Innovation through real-world experiences

5

Build your network and enhance your collaborative ecosystem

6

Leave your mark in shaping the future of energy.

Workshop topics

Data Center Integration

Climate Resilience and
Adaptation Initiative (READi)

Demand Flexibility

AI applications for Grids and
Generation

European Energy
Innovation Interest Group

Industrial Decarbonisation

Integrated Energy System
Planning & Smart GHG Targets

Distribution & DER Integration

Solar, Hydro and Wind power

Control Center of the
Future

Energy Storage

Future Network Operations

Day 1

1st of April 2025

Holistic Planning and Engagement for Our Energy and Environmental Future: SMARTargets and Integrated Energy System Planning

This session will explore strategies electric companies and other energy sector organizations can use for comprehensively planning and engagement for a decarbonized future.

The first part of the session will focus on SMARTargets, a new methodology that will help companies set greenhouse gas (GHG) emissions reduction targets and identify strategies that are grounded in science, actionable in terms of considering company opportunities, constraints, and risks, and aligned with the international policy goal of limiting warming to well below 2°C. Join us to learn how SMARTargets™ can help European companies, communities, and other stakeholders develop and validate actionable Paris Agreement aligned GHG targets, strategies, and risk management that are grounded in reality and science. The second part of the session will explore the concept of integrated energy system planning (IESP), tying back to overall GHG emission reduction target setting, and diving further into the framework, methods, and tools to conduct an IESP. Implementing an ISP can lead to more cost-effective, reliable, and robust resource portfolios as the energy industry transitions to lower states of carbon. As the session will explore, it can also play an important role in supporting setting company carbon targets, and assessing various potential pathways to meet specified targets. Considering these important issues is essential for developing practical and actionable company targets and planning strategies, transition risk assessment and management, and the overall cost-effective decarbonization of economies, and constructive policy and stakeholder engagement and cooperation for achieving greater ambition and balancing trade-offs..

Tuesday, 1st of April

TIME	TOPIC	PRESENTER
9:00	Welcoming and stage setting	Claudia Octaviano, PhD., Principal Technical Leader and SMARTargets Project Co-lead, EPRI
9:05	Overview of the need for a new methodology for corporate climate targets and strategies	Morgan Scott, Vice President Sustainability & Global Outreach, EPRI
9:15	The SMARTargets approach, and the development process	Claudia Octaviano, EPRI
9:30	Panel Discussion: Key stakeholder needs in Europe and the leadership required from EU companies - Marta Martínez Sánchez, Iberdrola - Michaela Zhironova, Nordea - Robert Paprocki, PSE	Morgan Scott, Moderator
10:30	Coffee Break	
11:00	Welcome and IESP overview	Eknath Vittal, Technical Executive, EPRI
	EU Horizons Project - Mopo: Pan-European Framework for Integrated Resource Planning Overview	Álvaro Porras, EPRI Europe
12:30	Lunch	



Steve Rose
Technical Executive



Claudia Octaviano
Technical Leader III - Supervisor



Eknath Vittal
Tech. Executive

Status and future prospects of hydrogen: fostering collaboration and expertise in the growing hydrogen value chain

Hydrogen is recognized as a key pillar of the decarbonization of the world economy. Not only in Europe, but also in regions such as the US, Latin America, China, India, Japan and the Middle East, investments in clean hydrogen production are growing rapidly and each region is developing regulations to help accelerate deployment. During the session, we will discuss with experts how the hydrogen market is evolving in different regions of the world, as well as the challenges and keys to developing sustainable hydrogen projects and moving towards industrialization. Where H2 demand is likely to be in the short term will be analyzed, based on real experiences, as well as how to reduce project risk, offtake contracts and green investment. New models of collaboration for low-carbon offtake, industrial strategies and projects will be discussed, as well as the key role of collaboration between stakeholders in moving towards the decarbonization targets set.



Maria Jaen

Team lead, Principal



Neil Kern

Program/Area
Manager

Tuesday, 1st of April

TIME	TOPIC	PRESENTER
9:00	Global Hydrogen Landscape and Outlook During this session we will analyze how the hydrogen economy is progressing in the different regions of the world, mainly in Europe, US, Asia or Latin America. We will answer questions about how political and regulatory commitments differ between countries? What steps are being taken to encourage project decarbonization initiatives? What incentives and future plans are needed to drive long-term financing?	Moderator: Neil Kern (EPRI) Speakers: - Tara van Abkoude (TNO) - África Castro (Clean H2 Mission). - IEA TCP H2
10:30	Coffee Break	
11:00	Accelerating Successful Commercial Scale Hydrogen Projects During this session, global approaches to the development of scalable, capital-efficient green hydrogen projects and how to move from demonstration projects to industrialization will be discussed. How to accelerate FID? How to effectively share lessons learned and best practices?	Moderator: Joe Estrada (EPRI) Speakers: - Marcos López-Brea (DH2) - Paolo Mazzara/Adamo Screnci (Nextchem) - Javier Plaza de Agustín (Iberdrola) - Thomas Fureder (Barclays) - Teresa Rebuelta (Eurazeo)
12:30	Lunch	
13:30	Identifying Pathways and Timelines to Sustainable Hydrogen Demand During the session we will discuss where H2 demand is likely to be in the near term and how end-use cases are evolving. What are the strategies and new collaboration models for H2 buyers based on a sustainable and circular economy?	Moderator: María Jaén (EPRI) Speakers: - Mario Canet (TMB) - Willen Frens (BA2C) - Emilio Nieto (CNH2) - SHYNE (TBC)
15:00	Coffee Break	
15:30	The Importance of Global Collaboration Decarbonization of the energy system is a global challenge, so global solutions are needed. The private sector, governments, academia, and other organizations need to work collaboratively to maximize the impact of their actions and in a coordinated way. In this session we will discuss the Low Carbon Resources Collaborative Initiative that EPRI is developing together with industry and success stories will be shared in the areas of Power-To-X, Mobility and Renewable Fuels.	Moderator: Neil Kern (EPRI) Speakers: - Nick Pilot (EPRI) - Joe Estrada (EPRI) - Lea Boche (EPRI) - Aruna Chandrasekar (EPRI)
17:00	End	

Technology Innovation Session

Since 2022, EPRI has been working on strategies to increase the collaboration among the various European players that participate in the energy transition. We would like to invite innovation managers from all Europe to be part of this event and share their experience to continue ensuring collaboration and accelerating innovation in the energy industry.



Anne-Lise Laurain

Sn. Technical
Leader



Mark McGranaghan

EPRI Fellow

Tuesday, 1st of April

TIME	TOPIC	PRESENTER
9:00 – 9:30	Introduction and round table: Do you have an AI and Data strategy in place? What are the challenges you are facing?	All participants
9.30-10.15	Keynote – presenting your strategy on AI in Data management.	Rafael San Juan (Iberdrola)
10.15-10.30	Insights on synthetic smart meter data	Gareth Jones (Centre for Net Zero)
10:30	Coffee Break	
11:00-11:30	Update on EPRI Technology Innovation program (like IEL Europe) – final inputs from all participants	Anne-Lise Laurain (EPRI Europe) and all participants
11.30-11.45	Updates on other challenges that EPRI is coordinating with (ESA challenges, DENA, ...)	All participants
11:45-12:30	Updates on EPRI's projects : DCFLEX, GET SET and interoperability: Flexit, Project Mercury and In:net.	Mark McGranaghan, EPRI Europe
12:30	Lunch	
13:30-15:00	Workshop on Metrics	Chris Coonick (NG)
15:00	Coffee Break	
15:30-16:30	Utility Innovation Program Strategies and Success Stories	Tapio Poutiainen (Fortum Oy) Han Stegemann (TenneT)
16:30-17:00	Feedback and next steps	Anne-Lise Laurain and all participants
17:00	Close	

Data Center Grid Integration

Data centers represent the first wave of mass industrial electrification, with the demand to power AI related growth leading the impetus. Together with a wide range of power system and data center stakeholders, EPRI's DC Flex initiative focuses on addressing the most pertinent data centers grid integration challenges. This workshop will share perspectives from across the industries on the data center integration challenge and walk through each of the main issues, discuss the innovations being evaluated and deployed and provide insights into challenge of anticipating growth in Europe.



Eamonn Lannoye
Managing Director,
EPRI Europe



Anuja Ratnayake
Emerging Technologies
Executive

Tuesday, 1st of April

TIME	TOPIC	PRESENTER
9:00	Welcome & Introduction - Integrating Data Centers into the Grid – EPRI - Keynote: Irish experience in data center connection – EirGrid (Saif Aldahmor) - An Overview of DCFlex - EPRI	Anuja Ratnayake, EPRI Saif Aldahmor, EirGrid
9.45	Panel Session: Views from the industry on data center integration with speakers from - RTE – Florent Xavier - Google – Mariela Atanasova - PPC – TBC - Schneider - Sebastien CRUZ-MERMY	Eamonn Lannoye, EPRI Europe
10:30	Coffee Break	
11:00	Topical sessions: Three interactive rounds of discussion topics addressing opportunities and challenges with flexibility - Data center design for flexibility - Data center technologies to unlock flexibility - Timeframes for flexibility provision - Utility programs and market design for flexibility - Concepts and products for data center grid integration - Innovation in regulations for large energy users - Grid planning for data center integration - Load forecasting challenges - Transmission planning challenges	Eamonn Lannoye, EPRI Europe Omar Siddiqui, EPRI Parag Mitra, EPRI
12:15	Wrap-up	
12:30	Lunch	

Driving Innovation in Energy Distribution: A Collaborative Workshop by EPRI and E.DSO (Part I)

This workshop, co-organized by EPRI and E.DSO, offers a unique platform for utility peers and other industry stakeholders to **share knowledge and explore emerging practices** that leverage (1) DER flexibility, (2) grid-forming inverter technologies, and (3) innovative approaches to strengthen distribution grid resiliency.

As the energy transition accelerates, **DSOs play a pivotal role in integrating Distributed Energy Resources (DER)** like solar PV, energy storage, and electric vehicles, all within a dynamic regulatory landscape.

Designed for technical experts, business managers, policy advisors, and regulatory compliance professionals, the workshop **fosters collaboration to scale DER integration effectively and sustainably**. Join us in shaping the future of energy distribution!



Tuesday, 1st of April

PART I: 1 st April 2025	
TIME	TOPIC
12:30	Lunch
13:00	DER FLEXIBILITY: LESSONS LEARNED FROM REAL-WORLD IMPLEMENTATIONS - Procuring Flexibility from Electric Vehicles in the Netherlands (<i>A. Wargers, ElaadNL/ENEXIS</i>) - UK Power Networks' Localflex Platform: First-Year Outcomes (<i>A. Lantrain, EPEX SPOT, with UKPN</i>) - I've Spent A Decade Assessing DER Flexibility Pilots: 10 Key Lessons in 10 Minutes (<i>A. Elena de Leonardo, Iberdrola</i>) - The FLEXIT Collaborative: Streamlining DER Flexibility Integration for DSOs (<i>EPRI team</i>) - Time-Varying Pricing: The Overlooked Third Way to Unlocking DER Flexibility? (<i>J.P. Chaves Ávila, Comillas</i>)
15:00	Coffee Break
15:30	ADVANCING DSO CAPABILITIES FOR THE E.U. NETWORK CODE ON DEMAND RESPONSE - Evolutions in DSO Processes and Roles to Operationalize DER Flexibility (<i>M. Erdei, iContest, with E.ON Hungary</i>) - Coordinating Grid Services with Flex Connections in Operational Time (<i>F. Silver, Smarter Grid Solutions</i>) - New SCADA Capabilities & DER Flexibility: Report out from <i>InterSCADA</i> Project (<i>A. Dognini & M. Couto, EPRI</i>) - AMI-based LV Network Monitoring and Inverter-based DER Control Integration in SCADA (<i>H. Mughari, ASM Terni</i>) - U.S. Insights: DSO Capabilities Required to Enable DER Services in Distribution Operations (<i>M. Couto, EPRI</i>) - Developing DSO Capabilities for DER Visibility and Local Flexibility Activation (<i>Pablo Martín, Cuerva</i>)
17:00	Close
19:00	Cocktail Reception



Tanguy Hubert | EPRI
Sr. Principal
Technical Leader



Mario Couto | EPRI
Technical
Leader



Laia Guitart | E.DSO
Projects
Officer

Getting Climate READi®: A Common Framework for Physical Climate Risk Assessment

As electricity demand grows, the power grid is also facing the increasing frequency of certain extreme weather events that threatens the stability of this critical infrastructure. To address these pressing issues, the power industry requires a rigorous and comprehensive approach to risk assessment – this is the motivation behind building The Climate READi® (REsilience and ADaptation initiative) Framework.

Join us for an insightful half-day session to delve into the Climate READi®: Power Framework's components and its pivotal role in shaping the future of power grid resilience. Climate READi® Director Morgan Scott will provide an overview of the various Framework deliverables available to inform a robust physical climate risk assessment. Additional talks from expert speakers will explore:

- Climate Data Availability and Suitability
- Asset Vulnerability
- System and Regional Risk
- Prioritizing Adaptation Strategies



Morgan M. Scott

VP Sustainability &
Global Outreach



Aguarin Iriarte

Technical Assistant

Tuesday, 1st of April

TIME	TOPIC	PRESENTER
12:30	Lunch	
13:30	Welcome and Introduction to Climate READi®: Power Framework As EPRI launches the Climate READi®: Power Framework, a development effort kicked-off in April 2022, this session will focus on an overview of the initiative's general approach to physical climate risk and the Framework. This discussion will set the stage for the rest of the day's conversations focused on the three primary areas of the Framework: Physical Climate Data for Power System Analysis, Asset Exposure and Vulnerability, and System Risk and Prioritization.	Morgan Scott, EPRI
14:15	Physical Climate Data for Power System Analysis - Introduce WS1 and Key Deliverables - Presentation from David on their work	Morgan Scott David Brayshaw, University of Reading
14:15	Asset Exposure and Vulnerability - Introduce WS2 and Key Deliverables - Presentation from asset-focused speaker	Morgan Scott and Brandon Dellis, EPRI
15:00	Coffee Break	
15:30	System Risk and Prioritization - Introduce WS3 and Key Deliverables - Presentation from Laurent on the RTE Experience	Morgan Scott, EPRI Florent Xavier, RTE
16:40	The Future of READi: 2025 and Beyond As the Framework launches, the work must continue! During this session we'll explore remaining research needs, how application of the Framework can be enabled, and the plan for how the READi framework will be upkept in 2025 and beyond. We look forward to your input and reflections as we chart the course ahead for Climate READi.	Morgan Scott, EPRI
17:00	End	

Day 2

2nd of April 2025

Driving Innovation in Energy Distribution: A Collaborative Workshop by EPRI and E.DSO (Part II)

This workshop, co-organized by EPRI and E.DSO, offers a unique platform for utility peers and other industry stakeholders to **share knowledge and explore emerging practices** that leverage (1) DER flexibility, (2) grid-forming inverter technologies, and (3) innovative approaches to strengthen distribution grid resiliency.

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EPRI



Wednesday, 2nd of April

PART II: 2nd April 2025

TIME	TOPIC
9:00	INNOVATIVE APPROACHES TO STRENGTHEN DISTRIBUTION GRID RESILIENCY <i>Current confirmed contributions:</i> • Learning from Storm Eowyn: Practical Resilience Strategies (<i>R. Tucker, ESB</i>) • Enhancing Cyber Resilience: Advanced Network Isolation Strategies (<i>H. Barbosa, E-REDES</i>) • Securing the Charge: Cyber Risks and Protections in EV Infrastructure (<i>A. Wargers, ElaadNL/ENEXIS</i>) • U.S. Insights: Next-Generation DSO Practices for Weather-Resilient Distribution Systems (<i>M. Couto, EPRI</i>)
10:30	Coffee Break
11:00	GRID FORMING (GFM) INVERTERS IN DISTRIBUTION GRIDS • Mini-Training: Fundamentals of GFM Capabilities – What Should DSOs Know? (<i>A. Huque, EPRI</i>) • Strategic Insights: Navigating the Transition to GFM DERs (<i>M. Amin, E.ON</i>) • DSO Perspectives on the Technical Opportunities and Challenges of GFM DERs (<i>T. Hearne, ESB & EU DSO Entity</i>) • Learning from the UK's first Grid-Connected GFM BESS: Requirements and Commissioning (<i>X. Zhou, NESO</i>)
12:30	Lunch



Tanguy Hubert | EPRI
Sr. Principal
Technical Leader



Mario Couto | EPRI
Technical
Leader



Laia Guitart | E.DSO
Projects
Officer

Latest advancements towards resilient, flexible, and efficient wind farms

EPRI wind experts as well as external industry collaborators will share experiences on the latest technological advancements applicable across the full project lifecycle. The agenda will span:

- Wind farms design optimization to maximize owner's value and power system contributions with a long-term perspective;
- Novel techniques for wind turbine performance optimization and components health monitoring;
- Opportunities to maximize value at the end of wind farms lifetime by optimizing repowering, lifetime extension, and end-of-use strategies.



Nicolás Marx

Technical Leader



Brandon Fitchett

Program/Area
Manager

Wednesday, 2nd of April

TIME	TOPIC	PRESENTER
9:00	Opening and welcome	Nicolás Marx Hermoso, EPRI
9:15	Latest developments and challenges for wind farm owners, and related R&D efforts in Spain and Europe	Juan De Dios Lopez Leiva, AEE
9:30	Addressing key challenges in the global wind industry by applied research	Brandon Fitchett, EPRI
10:15	Low carbon alternatives for foundations	Frank Neumann, RWE
10:30	Coffee Break	
11:00	A needle in a haystack? How to leverage SCADA data to detect underperformance • Actual vs modelled production and wake losses	Clement Jacquet, EPRI
11:45	Wind-storage hybrids: market drivers, development and operational lessons learned	• David Bowly, AGL • Justin Raadle, EPRI
12:30	Lunch	
13:30	Wind farms design and repower optimization. From LCOE to Total Cost of Ownership.	• Ruben Rivadulla, ENEL • Alberto Pico, EPRI
14:00	Lessons learned on wind farms lifetime extension and repower	• Iñigo Luna, Naturgy
14:30	Mitigation of impact on birds – Collaborative project	• Heikki Willstedt, AEE • Nicolás Marx Hermoso, EPRI
15:00	Coffee Break	
15:30	How performance and health monitoring solutions are implemented?	• Yolanda Vidal Seguí, UPC • Clement Jacquet, EPRI
16:30	Enhancing wind farms resilience	Brandon Fitchett, EPRI
16:45	Adjournment, conclusions, next events, and collaboration opportunities	Brandon Fitchett, EPRI
17:00	Close	

Combined Cycle Gas Turbines – Life in the Future

Many factors are now posing challenges and yet great opportunities for the gas turbine, specifically for the combined cycle unit. Decarbonization goals are driving solutions for utilizing low carbon fuels and furthering carbon capture and sequestration. As these goals go from targets, to being part of regulations, realities around the true challenge becomes ever clear. Moreover, as part of the decarbonization path, multiplication of renewable capacity is becoming reality. This buildout is not just adding to future challenges but daily imparts increased flexibility response from dispatchable generation that includes combined cycle gas turbines. This session will focus on the current and future opportunities associated with CCGTs as we accelerate into the future.



Bobby Noble

Senior Program/Area
Manager

Wednesday, 2nd of April

TIME	TOPIC	PRESENTER
9:00	Introduction & Welcome	Bobby Noble, EPRI
9:15	Flexibility & Decarbonization Perspective for CCGTs in Spain	Tomas Alvarez, ENDESA
9:45	ETN Global Perspective for CCGTs in the Future Portfolio	Christer Björkqvist, ETN Global
10:15	Q&A Session	Tomas Alvarez, ENDESA
		Christer Björkqvist, ETN Global
10:30	Coffee Break	
11:00	Enhancing Gas Turbine Capabilities	Jeff Benoit, PSM
11:20	Gas Turbine Flexibility Realities & Potential	Bobby Noble, EPRI
11:45	Long-Term Low-Carbon Fuel Considerations	Bobby Noble, EPRI
12:15	Q&A Session	All
12:30	Lunch	

Energy Storage: An Emerging Tool for Achieving Your Decarbonization Goals (Part I)

Energy storage is rapidly emerging as an important tool to achieve decarbonization goals in electrical grids and industrial systems. This session highlights the rapid commercial deployment of energy storage plants, emerging technologies and pilot plants, and new use cases for energy storage. Join us for a discussion of applications of energy storage technologies including lithium ion batteries, pumped storage hydropower, thermal energy storage, and much more!



Erin Minear

Program/Area
Manager



Justin Raade

Program/Area
Manager



Francisco Kuljevan

Team Lead, Sr.
Principal

Wednesday, 2nd of April

Part I: 2nd April 2025

TIME	TOPIC	PRESENTER
13:30	State of the Energy Storage Industry: Building Momentum - Accelerating deployment of lithium ion battery projects - New PSH projects announced - Emerging use cases for energy storage - EPRI portfolio of energy storage programs	Erin Minear Francisco Kuljevan Justin Raade (EPRI)
14:00	Navigating the Path to Safer Energy Storage: Progress and Future Work - What have we learned from past incidents? - Where are there areas for improvement?	Lakshmi Srinivasan (EPRI)
14:30	This Is Happening! New Tech Megawatt-Scale Energy Storage Pilot Plants - Large investments and grants in emerging technologies - Review recent or announced plants with a focus on Europe	Justin Raade (EPRI)
15:00	Coffee Break	
15:30	Panel Discussion on Utility and Energy Company Use Cases	Scott Hume, EPRI (moderator) David Bowly, AGL Francisco Alia, Repsol
17:00	Close	

Customer Demand Flexibility

This customer-centric session will explore the opportunities, current activities, and challenges associated with demand flexibility across all customer segments. European utilities will share firsthand experiences on their pursuit of customer demand flexibility and how resulting successes/barriers have informed their programs and planning. EPRI will share insights from our efforts associated with customer behavior, AI opportunities, device level capabilities, laboratory and field demonstrations, plus emerging technologies that provide new avenues of demand flexibility.



Alexander Summe

Director, Research
and Development

Wednesday, 2nd of April

TIME	TOPIC	PRESENTER
12:30	Lunch	
13:30	Introduction, State of Demand Flexibility in U.S., Ongoing EPRI Efforts	<i>Alex Summe</i> EPRI
14:00	Success & Barriers to Leveraging Customer Flexibility	<i>John Walsh</i> ESB
14:30	Energy Management Platform	<i>Arancha Ortiz Marina</i> Iberdrola
15:00	Coffee Break	
15:30	TSO Perspective: Coordinating Flexibility across the System	<i>Florent Xavier</i> RTE <i>Camilla Berg Knudsen</i> Energinet
16:30	Implementing Demand Flexibility: Lessons Learned	<u>Panel:</u> <i>Omar Siddiqui</i> EPRI <i>Amber Woodward</i> Centre for Net Zero <i>Davide De Michino</i> Enel
17:00	Close	

Industrial Electrification and Decarbonization

The European Union (EU) aims to reduce greenhouse gas (GHG) emissions by at least 55% by 2030 compared to 1990 levels. Achieving these targets requires exploring ways for European industries to decarbonize while remaining competitive. The global industrial sector, which relies heavily on fossil fuels, produces significant CO2 and other emissions. Reducing emissions in this sector is crucial for meeting governmental targets.

New technology advancements are needed to enable higher efficiency and electrification of industrial processes. High-temperature process heating accounts for most of fossil fuel use in industry. Such processes need to be converted to clean electric heating. Also, the use of waste heat with high-temperature electric heat pumps, will reduce fossil fuel footprint in industry. Additional technology advancements and demonstrations are needed in manufacturing and process changes to reduce both reliance on fossil fuels and process emissions.

This session discusses new activities and developments in industrial electrification and decarbonization – especially as related to activities in the EU. The session has two roundtable panels – one focused on industrial companies, and the second focused on utilities and service providers who are providing the support. The session concludes with actions and future activities needed to reduce GHG emissions in the industrial sector.



Ammi Amarnath

Technical
Executive, Principal

Wednesday, 2nd of April

TIME	TOPIC	PRESENTER
09:00	Introduction to the Session	Ammi Amarnath, EPRI
09:10	Keynote: Industrial Decarbonization Efforts in Spain – Basque Supercluster Activities	Jose Hormaeche, Basque Energy Cluster
09:30	Panel 1: Industrial Companies Industrial Electrification & Decarbonization Efforts in Europe. Perspectives from Industrial Companies	Carlos Sanchez, Bayer Maria Saurez Bonet, UPM Giovanni Scomparin, Eurelectric
10:00	Roundtable 1: Industrial Electrification & Decarbonization Efforts by European Industrial Companies	Discussions led by Ammi Amarnath, EPRI
10:30	Coffee Break	
11:00	Industrial Decarbonization efforts in the United States. Federal and State Government activities	Ammi Amarnath (for Baskar Vairamohan), EPRI
11:30	Panel 2: Utility and Service Providers Industrial Electrification & Decarbonization Efforts in Europe. Perspectives from Utilities & Service Providers	Marta Martinez, Iberdrola Angel Martinez, RPOW Arin Kaye, EPRI
12:00	Roundtable 2: Industrial Electrification & Decarbonization Support by European Utilities Summary and Action Items	Discussions led by Ammi Amarnath, EPRI
12:20	Wrap Up	Ammi Amarnath, EPRI
12:30	Lunch	

Future Network Operations Toolkit

This session builds on EPRI's leading edge research into developing software applications and tools to manage processes on the transmission network. There will be a particular focus on the needs for the emerging RES and HVDC dominated networks and how software applications should be designed to be adaptive, to shorten lead times for delivery and to foster collaboration.

The data session will focus on the operational data and models that will serve the application, focusing on data quality, validation and how models and streaming data can coalesce towards a digital twin of the transmission network.



Adrian Kelly

Team Lead, Sr
Principal

Wednesday, 2nd of April

TIME	TOPIC	PRESENTER
12:30	Lunch	
13:30	Software Applications to Manage the Real Time Transmission network– Overview of EPRI Research - Future operational architecture for operational technology - EPRI operational software toolkit. - Introducing aLLarMa the EPRI LLM tool for querying operational data - Introducing Illuminate EPRI PoC for image based real time assessments	Adrian Kelly - EPRI
	Forecasting for balancing in the Nordic System	Darius Kvainuaskas - Svenska Kraftnat
	Interactive Breakout What is the priority toolkit to manage the future transmission network?	All
15:00	Coffee Break	
15:30	Operational Data and Models to Manage the Network of the Future - Overview of EPRI Research - Towards a digital twin for operations – Combining DSA simulation and PMU - Introducing aLLarMa the EPRI LLM tool for querying operational data.	Adrian Kelly - EPRI Europe
	Tools For Net Zero - Stability and weak networks, Visualisation Management. Dynamic Security Assessment in Real Time Operations	Jacob Kelly - SSE Aleksander Boricic - TenneT
	Interactive Breakout What are the barrier to realising the digital twin vision?	All
17:00	Close	

Day 3

3rd of April 2025

Increasing Reliability & Performance in PV while Scaling Solar Capacity

This session will explore strategies to improve the reliability and performance of photovoltaic (PV) systems while scaling up solar capacity. Key topics include:

- **Design Optimization for Reliability:** Techniques and best practices for optimizing PV plant design to enhance reliability and performance.
- **Data-Driven Performance Assessment:** using data analytics. Evaluating the availability and performance of solar projects
- **PV Plants and components Reliability:** Discussing methodologies and technologies to ensure long-term reliability of PV systems and components.
- **Innovations and Sustainability:** Showcasing new technologies and sustainable practices, including recycling and circular economy initiatives.



Wayne Li

Technical Executive



Nicolás Marx

Technical Leader

Thursday, 3rd of April

TIME	TOPIC	PRESENTER
9:00 a.m.	Opening and Welcome	Marta Larrea, EPRI
9:15 a.m.	PV in Spain and Europe - Status, challenges, and perspectives in 2025	Cristina Torres Quevedo, UNEF
9:40 a.m.	Addressing key challenges in the solar industry with applied research	Wayne Li, EPRI
10:30 a.m.	Coffee Break	
11:00 a.m.	Inverter Performance, Reliability & Efficiency Verification	Alberto Pico, EPRI
11:30 a.m.	UV induced degradation and spontaneous glass cracking	Wayne Li, EPRI
12:00pm	European industry priorities	Nicolás Marx Hermoso, EPRI
12:30 p.m.	Lunch	
13:30 p.m.	Plant Design & EPC Best Practices	• Daniel Vilchez de la Fuente, ENEL • Daniel Ketel and Camille Morel, Akuo
14:15 p.m.	PV Plant field characterization	• Joe Karas, EPRI
14:40 p.m.	O&M Strategy & Best Practices	• Carolina Nester, Sonnedix
15:00 p.m.	Coffee Break	
15:30 p.m.	PV Performance & Reliability Data	• Mariano Melero, LSBP • Daniel Fregosi and Wayne Li, EPRI
16:30 p.m.	EPRI Engagement opportunities	Nicolas Marx Hermoso, EPRI Europe
16:45 p.m.	Q&A and Adjourn	Wayne Li, EPRI
17:00	End	

Energy Storage: An Emerging Tool for Achieving Your Decarbonization Goals (part II)

Energy storage is rapidly emerging as an important tool to achieve decarbonization goals in electrical grids and industrial systems. This session highlights the rapid commercial deployment of energy storage plants, emerging technologies and pilot plants, and new use cases for energy storage. Join us for a discussion of applications of energy storage technologies including lithium ion batteries, pumped storage hydropower, thermal energy storage, and much more!



Erin Minear

Program/Area
Manager



Justin Raade

Program/Area
Manager



Francisco Kuljevan

Team Lead, Sr.
Principal

Thursday, 3rd of April

Part II: 3rd April 2025

TIME	TOPIC	PRESENTER
9:00	Emerging Energy Storage Technology Solutions - The latest insights on technology advancements and field demonstration	Lakshmi Srinivasan and Justin Raade (EPRI moderators) John O'Donnell, Rondo Francesco Oppici, Energy Dome NGK
10:30	Coffee Break	
11:00	EPRI Energy Storage Highlights - Thermal Energy Storage for Industrial Decarbonization and District Heating - Wind + Storage - Enhancing Energy Storage Reliability - Energy Storage Integration Council (ESIC)	Justin Raade and Erin Minear, EPRI
12:00	Pumped Storage Hydropower: Overcoming Challenges and Seizing Opportunities in the Energy Transition	Francisco Kuljevan (EPRI moderator) Gordon Edge, IHA Jaime Riesco Canela, Iberdrola Dr. Jens Kahler, Fichtner
12:30	Lunch	

Hydropower: Paving the Way for a Clean Energy Transition in Europe

Hydropower is crucial for Europe’s clean and resilient energy transition, yet the continent faces significant challenges. With an aging fleet averaging 40 years—over 20% of which are more than 60 years old—there is an urgent need for modernization. As hydropower adapts to support the integration of wind and solar energy, its traditional operations are changing, leading to potential negative impacts on key components. This session will delve into research in the areas of materials, repairs, and advanced technologies to better understand and manage these critical legacy assets to ultimately enhance Europe’s hydropower systems. Join us to learn about the challenges European hydropower operators are experiencing and the innovative research EPRI is conducting related to materials, repairs, and advanced technology to ensure hydropower remains a cornerstone of the future energy landscape.



Francisco Kuljevan
Team Lead, Sr.
Principal



Nicolás Marx
Technical Leader

Thursday, 3rd of April

TIME	TOPIC	PRESENTER
13:30	Current Landscape of the Hydropower Sector: Rising to the Challenge - What can we learn from the existing fleet? - Energy transition: Hydropower, a key stepping stone into meeting climate goals - Challenges the industry faces (regulatory, climate, aging fleet, workforce transition, flexibility) - EPRI Hydropower Generation portfolio	Mike Caravaggio, EPRI Gordon Edge, International Hydropower Association
	Harnessing Digital Twins: Innovatively Tackling of Degradation and Fatigue Life in Hydropower Water Conveyance Structures Amid Rapid Operational Changes	Dr. Christophe Nicolet, Power Vision Engineering
	Innovating Together: Pioneering Hydropower's Future through Cutting-Edge Technology and Collaborative Research with Universities and R&D Institutes - Addressing Vibration Challenges in Hydro Turbines: Causes, Effects, and Mitigation Strategies - Innovations in Torsional and Ultrasonic Vibration Monitoring: Enhancing Reliability and Performance - Exploring Non-Conventional Pumped Storage Schemes: Evaluating Their Advantages and Disadvantages	Dr. Alexandre Presas Batllo, Universitat Politècnica de Catalunya Francisco Kuljevan, EPRI Dr. Jens Kahler, Fichtner
	Coffee Break	
15:00		
15:30	Hydropower Materials Investigations: Exploring Corrosion Fatigue and X4CrNi13-4 (CA6NM) through Destructive Evaluation of a Legacy Kaplan Runner and Assessing Welding and Post-Weld Heat Treatment Procedures for Repairs	David Kelleher, ESB Eric Prescott, EPRI
16:15	Exploring Public Funding Opportunities for Hydropower Projects: - Solutions for Hydropower plants to Enhance operational Range, Performance and improve environmental impAct (SHERPA) - Rapid Research on Universal Near Net Shape Fabrication Strategies for Expedited Runner Systems (Rapid RUNNERS): Advancing Hydropower Manufacturing with Advanced Manufacturing Technologies	Diego Castejon, Iberdrola (SHERPA Coordinator) Dr. Mark Christian, EPRI
16:50	Open Discussion	All
17:00	Close	

Control Center of the Future

This session builds on EPRI's leading edge research into the Control Center of the future, with focus on innovative facilities, equipment and hardware as well as the human factors and training aspects of future operations. In this session we will hear from TSOs from around the world who will present and discuss the challenges and solutions they have, with a moderated open conversation between participants and a presentation of EPRI's thinking and recent research on the topic.



Adrian Kelly

Team Lead, Sr
Principal

Thursday, 3rd of April

TIME	TOPIC	PRESENTER
9:00	Facilities and Equipment for the Control Center of the Future – Overview of EPRI Research - Control room layout design best practices - Leading edge technology for control rooms - Training facilities for future system operators - Emerging visualisation technology and design	Adrian Kelly, EPRI Europe
	SSE Net Zero Control Center – Conceptual Design	Mark Jones SSE
	Breakout Session What does the future control room look like?	All
10:30	Coffee Break	
11:00	Human Factors for the Control Room of the Future - Overview of EPRI Research - Visualization Enhancements - Skills Rules Knowledge and Mindset Framework - Optimal shift patterns - Operational metrics survey	Adrian Kelly and Razvan Pabat-Stroe, EPRI
	NESO – Operator Console Concept	Steve Bland, NESO
	Breakout Session What are the characteristics of future operators and how do we find and retain them?	All
12:30	Lunch	

Maintaining Grid Stability: Overcoming Challenges of Operation with High IBR Penetration

Transmission System Operators are navigating complex challenges due to the increasing penetration of inverter-based resources, large offshore wind farms, and power electronic-connected loads like data centers. These elements introduce new dynamics into transmission planning and operations, necessitating innovative solutions and adaptations to ensure reliable and stable power system operation. Discussions will touch on concerns related to inverter-driven instability, fault-ride through, protection adequacy and Control Center limitations, along with potential solutions like enhanced simulation analysis tools, grid forming operating modes on STATCOMs, BESS and HVDC interconnectors; revision of grid codes and connection agreements and changes to well-established Control Center guidelines and capabilities.



Razvan Pabat-Stroe
Technical Leader



Sean McGuinness
Program/Area
Manager

Thursday, 3rd of April

TIME	TOPIC	PRESENTER
12:30	Lunch	
13:30	Rethinking Contingency Analysis: Adapting to Evolving Power System Dynamic Evolving System Defense Plans to meet the needs of Inverter-Dominated Grids Challenges with Planning and Operating an Inverter-Dominated Island Grid Operational Policy Roadmap, Large data centers operating experience and inertia procurement HVDC-WISE Project Key Insights about integrating multi-terminal HVDC into European Grids	Razvan Pabat-Stroe & Sean McGuinness, EPRI Peter Van Meirhaeghe, Elia Saif Aldahmor, EirGrid Sean McGuinness, EPRI Europe
15:00	Coffee Break	
15:30	Taming the Waves: Steering Through Inverter-Driven Oscillations in Great Britain Oscillatory instability and enhancing dynamic stability assessment tools in real-time operations Energy transition: stability challenges and solutions Field experience with using synchronous compensators for oscillation damping, real-time risk indicators using AI, advance solutions for managing IBR	Xiaoyao Zhou, NESO Aleksandar Boricic, Tennet Cosimo Pisani and Giorgio Giannuzzi, Terna
17:00	End	

AI @ EPRI

This session introduces EPRI's work leading edge research on AI for the energy sector. EPRI is at the forefront of the generative revolution and has a long history with AI research applications for members, helping them navigate challenges while developing AI-based applications for priority use cases. The Workshop is split into two session focuses on the Grid based AI applications and generation based AI applications. The aim is to get SMEs and other stakeholders in the room to have a cross sectoral discussion on how AI can be deployed in the energy sector safely and at scale.



Adrian Kelly

Team Lead, Sr
Principal



Lea Boche

Technical Leader II

Thursday, 3rd of April

TIME	TOPIC	PRESENTER
12:30	Lunch	
13:30	AI @ EPRI For Grid - Applications for LLM for Grid Operations and Planning Automation - LLM Benchmarking for the Energy Industry - AI-EFFECT EU Horizon Project - EPRI OPAI Initiative AI Strategy for Svenska Kraftnat Interactive Breakout Session Enablers and Barriers for AI Deployment in Energy Sector?	Gianluca Lipari, EPRI Europe Sean McGuinness, EPRI Europe Eamonn Lannoye, EPRI Europe Darius Kvainauskas Svenska Kraftnat All
15:00	Coffee Break	
15:30	AI @ EPRI for Generation - EPRI Gen Use Cases - Hydrogen Valley Digital Twin Interactive Breakout Session AI Use Cases for Grid and Generation?	Lea Boche, EPRI Europe Maria Jaen, EPRI Europe All
17:00	Close	

Useful Information

Venue



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